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Abstracts

FEATURE ARTICLES

TECHNIQUES FOR INVESTIGATING BREEDING CHRONOLOGY IN MARBLED MURRELETS, DESOLATION SOUND, BRITISH COLUMBIA CECILIA LOUGHEED¹, BRETT A. VANDERKIST, LYNN W. LOUGHEED¹ AND FRED COOKE

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Abstract. We used several methods to study the chronology and synchrony of breeding events of the Marbled Murrelet (*Brachyramphus marmoratus*) population at Desolation Sound, British Columbia, from 1996 to 1998. The timing of breeding events varied among years; on average the breeding season lasted from 21 April to 5 September. We assessed the biases of each method used by comparing the results to the estimate of the integrated breeding chronology. Counts of hatch-year birds at sea were biased toward earlier breeders, missing an estimated 24% of the fledglings. Two other methods, physiological analysis of the yolk precursor vitellogenin from blood samples and monitoring by radio-telemetry could produce a complete distribution of breeding events if sampling were done throughout laying. Observations in the forest, date of first observation of a fledgling at sea during the breeding season, and fish-holding behavior produced insufficient data to be used as sole indicators of breeding chronology of this species. In general, breeding synchrony in alcids, assessed using data from a literature review, was unrelated to feeding habits but increased with latitude (41% of the variation was explained by latitude). Marbled Murrelets, however, bred less synchronously than predicted for an alcid at this latitude (50°N).

Key words: *Alcidae*, *Brachyramphus marmoratus*, *breeding chronology*, *British Columbia*, *chronology*, *Marbled Murrelet*, *radio-telemetry*, *seabird*.